

Abstract of Disclosure

A boring tool is moved through the ground in a region which includes at least one electrically conductive in-ground line and which is subject to static magnetic fields including the magnetic field of the earth. Tracking a positional relationship between the boring tool and the line, as well as a directional heading of the boring tool within the region are provided by: (i) generating a time varying magnetic field from the line; (ii) at the boring tool, detecting a composite magnetic signal which includes one component affected by the static magnetic fields and another component affected by the time varying magnetic field such that the static magnetic field component varies as a function of the directional heading and the time varying component varies as a function of the positional relationship; and (iii) processing the composite magnetic signal to separate the static magnetic field component and the time varying magnetic field component from the composite magnetic signal for use in determining the directional heading and the positional relationship. In one feature, the static magnetic field component is used to determine the directional heading of the boring tool and the time varying magnetic field component is used to determine the positional relationship.